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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,534	10/30/2003	Steve J. Shattil	27592-00404-US3	7591
30678 7590 12/18/2007 CONNOLLY BOVE LODGE & HUTZ LLP 1875 EYE STREET, N.W. SUITE 1100 WASHINGTON, DC 20036			EXAMINER KIM, KEVIN	
			ART UNIT 2611	PAPER NUMBER
			MAIL DATE 12/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/697,534

Applicant(s)

SHATTIL, STEVE J.

Examiner

Kevin Y. Kim

Art Unit

2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2003 and 15 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks, filed October 15, 2007, with respect to inconsistent cited reference have been fully considered and are persuasive.

Applicant argued that an IEEE publication, Wiegandt et al, cited against the claims do not have specific citations referring to Fig.2(a) and (b) at page 661. Upon a review of the previous Office action, it was found that a wrong document (by the same author) was mailed. Thus, in this Office action, the correct Wiegandt et al is mailed. Since the providing of a wrong reference amounted to missing references, the period for response restarts. The previous Office action is reproduced below for applicant's convenience, with renumbered claims as amended on October 15, 2007. The rejection of claims 18-20 is not repeated because they are now cancelled.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4,6 are rejected under 35 U.S.C. 102(b) as being anticipated by Wiegandt et al.

Claims 1 and 6

Wiegandt et al discloses in a carrier Interferometry (CI) transmitter:

a CI coder adapted to encode at least one data sequence (K^{th} bit) onto a CI code ($i\Delta\theta_k$) to produce at least one data-bearing code vector, and
a (OFDM) modulator adapted to modulate the at least one data-bearing code vector onto a plurality of subcarriers.

See Fig 2 (a) and (b), and page 661, first paragraph.

Claims 2 and 3.

OFDM modulators includes an IFFT which reads on “an invertible transform module.”

Claim 4

Wiegandt et al discloses that the CI coder is adapted to scramble CI codes generated by the CI coder. See page 661, second paragraph.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 5,7-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wiegandt et al in view of Steer et al (US 2003/0103445).

Claims 5 and 7.

Wiegandt discloses all the subject matter claimed except that at least one of the modulator and the CI coder is adapted to dynamically allocate subcarriers for at least one communication link.

Steer et al teaches dynamically allocating the subcarriers of OFDM to better accommodate the traffic requirements. See paragraph [0047].

Thus, it would have been obvious to one skilled in the art at the time the invention was made to adapt the OFDM modulator to dynamically allocate subcarriers for at least one communication link for the purpose of better accommodating the traffic requirements, as taught by Steer et al.

Claim 8.

Wiegandt et al is silent on whether the CI coding is non-uniform across the plurality of subcarriers. However, the CI coding is performed to ensure separability between bit k and $(N-1)$ other bits, non-uniform coding would have been obvious to increase separability between transmitted bits.

Claims 9-12,14

Although Wiegandt et al does not describe a CI receiver, an OFDM demodulator and a CI decoder corresponding to the OFDM modulator and CI coder would have been obvious by reversing the modulation and coding processes, as is commonly done in a communication system.

Claims 13 and 15.

An automatic frequency control (AFC) and interference cancellation are well known in the art to compensate carrier frequency variations and remove interference during transmission.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Y. Kim whose telephone number is 571-272-3039. The examiner can normally be reached on 8AM --5PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shuwang Liu can be reached on 571-272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 16, 2007

AU 2611

KEVIN KIM
PRIMARY PATENT EXAMINER

